

**REMARKS**

Claims 1, 5-7, 11-20, 22-24, 29 and 30 are pending. Claims 13, 19, 22, 23, 24 and 30 are amended. Claims 2-4, 8-10, 21, and 25-28 have been canceled. Claims 23, 24 and 29 have been withdrawn from consideration. No claims have been added.

**Claim objections**

The Office Action objects to claims 1, 22 and 30 for reciting “thermoplastic polymer layer” instead of “thermoplastic polymer film layer”. Applicant’s note that claim 1 was previously amended to include the word “film”, and claims 22 and 30 are amended herein.

**§ 112 Rejections**

Claim 19 stand rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Office Action asserts the phrase “hydrophilic surface” is indefinite and correctly suggests the clause refers to the first surface. Claim 19 has been so amended.

Applicants submit that the rejection of claim 19 under 35 USC § 112, second paragraph, has been overcome, and that the rejection should be withdrawn.

**§ 103 Rejections**

Claims 1, 5-7 and 11-14 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. 5,804,625 (Temperante et al.) in view of U.S. 5,804,519 (Riswick et al.). The rejection is traversed.

Temperante et al. is directed to hydrophilic, thermoplastic polymers in the form of fibers or films, the polymer mixture including one or more nonionic fluorochemical surfactants, and one or more non-fluorinated hydrophilic surfactants. Temperante et al. teach the addition of the recited surfactant to the molten thermoplastic polymer, as taught in reference column 8, lines 13 to 32. Thus, the reference polymers are rendered hydrophilic by direct addition to the melt, known in the art as “polymer melt additives”. This is an example of the prior art processes that Applicant’s have improved upon. Specifically, the instant invention provides an “adhesive

delivery system” whereby the surfactant may continually diffuse through the adjacent thermoplastic polymer film layer and replenish the hydrophilicity.

Claim 1 may further be distinguished from Temperante et al. by the limitation of “wherein said thermoplastic polymer layer is initially hydrophobic prior to surfactant migration”. As Temperante requires the addition of the melt additives to the polymer, the films of Temperante are rendered hydrophilic.

Claim 1 may be distinguished from the reference by the limitation of an “adhesive delivery system”, which is neither taught nor suggested by the reference. There is no teaching in Temperante et al. to add the reference surfactant mixture to an adhesive layer, as adhesives are not in the reference disclosure. The Office Action correctly notes the deficiencies of Temperante et al. and suggests the defects may be corrected by Riswick et al.

Riswick et al. describe a hot melt adhesive containing a nonionic fluorochemical surfactant having improved “strike-through” properties, which are defined at column 1, lines 37-30 as the ability to transmit liquid from a nonwoven substrate into a superabsorbant or fluff core, such as is found in disposable diapers. The reference notes that when a coating of the hot melt adhesive is applied between a coverstock nonwoven and an absorption pad, the hydrophilic character of the hotmelt improves the strike-through properties. Simply, Riswick et al. describe a construction of nonwoven/hotmelt/absorbent, whereby a liquid is transmitted from the porous surface of the nonwoven into the absorbent.

Temperante et al. describe a similar construction to that of Riswick et al. at column 3, lines 53 to 60; an aqueous media impervious backsheet, an aqueous media permeable (i.e. porous) top sheet, and an aqueous liquid absorbent layer or core between the backing and top sheet.

Thus, the hot-melt adhesive composition of Riswick et al. may conceivably be applied to the construction of Temperante et al.

However, the purported combination would not put one in possession of Applicant’s invention. Riswick et al., and further as applied to Temperante et al., require that the adhesive of Riswick be disposed between the nonwoven layer and the absorbent layer; i.e. as nonwoven/hotmelt/absorbent. As applied to Temperante et al., the construction could be described as aqueous media permeable (porous) topsheet/hotmelt/absorbent/backing sheet.

Claim 1 may be distinguished by the limitation of “film”. Claim 1 recites the application of the instant adhesive layer applied to the thermoplastic film layer — a nonporous layer. Riswick et al provide no teaching or suggestion of applying the reference hotmelt adhesive to a nonporous thermoplastic film layer. The reference disclosure is devoted solely to porous nonwovens and tissues, as described in column 1, lines 8 to 20, to allow the flow of fluid into the absorbent layer. Films are neither taught nor suggested, and would be precluded from such constructions such as diapers and sanitary napkins where a fluid must necessarily pass through the porous nonwoven layer adjacent the body.

Further, in the purported construction with Temperante et al., the Office Action provides no motivation for rendering the impermeable backing sheet of Temperante hydrophilic. The suggested construction may provide the reference absorbent articles with improved “strike-through”, but there is no teaching or suggestion in the construction that the surfactant of Riswick would migrate from the adhesive, through the aqueous liquid absorbent layer, through the impervious backing sheet, to render the surface of the backing sheet hydrophilic. In the described diaper construction, the Office Action provides no argument or reason for rendering the backing sheet hydrophilic (the layer most exterior and away from the body). The Examiner appears to be conflating the thermoplastic film layer of Claim 1 with the porous topsheet of Temperante).

In addition, the references are silent on the limitation of migration. The reference provides no teaching or suggestion that any adjacent layers are rendered hydrophilic due to the adjacent adhesive layer (containing a surfactant). The contact angles of Riswick et al were measured on the adhesive *per se*, and not on the nonwoven substrate. Further, as the nonwoven is necessarily porous, the underlying adhesive is exposed, in part, in the interstitial spaces of the porous nonwoven, so that any liquid in contact with the nonwoven will necessarily contact the hydrophilic hotmelt through these interstitial spaces.

Thus the Examiner errs when asserting (on page 5 of the Office Action) that “the multi-layer, aqueous liquid-absorbent article or Temperante as modified by Riswick comprises a hotmelt adhesive wherein the hotmelt adhesive comprises nonionic fluorochemical surfactant. Therefore, the water contact angle of less than 90° would be present”. Again, the adhesive of Riswick, and therefore Temperante, would be in contact with a porous nonwoven layer, not a thermoplastic film layer.

The rejection of claims 1, 5-7 and 11-14 under 35 USC § 103(a) as being unpatentable over U.S. 5,804,625 (Temperante et al.) in view of U.S. 5,804,519 (Riswick et al.) has been overcome and should be withdrawn.

Claims 18 and 22 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. 5,804,625 (Temperante et al.) in view of U.S. 5,804,519 (Riswick et al.) as applied to claim 1, and further in view of U.S. 5,514,120 (Johnstone et al.). The rejection is traversed.

Johnstone et al. describe an absorbent article comprising, in part, a liquid management member comprising a film having a microstructure-bearing hydrophilic surface.

In support of the rejection, the Examiner notes, on page 6, that the reference liquid management member is formed using thermoplastic polymers (col. 4, lines 41-42). However the microstructure surface of the liquid management member must also be hydrophilic. The reference teaches the source of the requisite hydrophilicity on column 5, lines 22 to column 6, line 16. In one embodiment, the hydrophilicity is imparted by using inherently hydrophilic polymers, such as polyvinyl alcohol. Inherently hydrophobic polymers, such as polyolefins, may be rendered hydrophilic by the conventional means such as by surface treatment, application of surface coatings, or incorporation of selected agents". Thus the reference provides no justification for making the combination suggested by the Examiner.

Further, as previously argued, Riswick et al require that the hotmelt adhesive layer be disposed between the porous nonwoven layer and the absorbent layer. Again, Riswick is directed to improving "strike through" from a porous nonwoven layer to the absorbent layer. Were one to apply the hotmelt adhesive of Riswick et al. to the article of Johnstone, as represented by Figure 1, the adhesive would be disposed between liquid permeable layer 14, and absorbent core 18. Applicant's claims 18 and 22 would require that the liquid management layer 12 have an adhesive layer bonded to surface 20, or the opposite surface (unnumbered).

The rejection of claims 18 and 22 under 35 USC § 103(a) as being unpatentable over U.S. 5,804,625 (Temperante et al.) in view of U.S. 5,804,519 (Riswick et al.) as applied to claim 1, and further in view of U.S. 5,514,120 (Johnstone et al. has been overcome and should be withdrawn.

Claims 1, 13-17 and 30 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. 2002/0058744 (Goeman et al. = U.S. 6,476,114) in view of U.S. 2003/0152730 (Bradley et al. = U.S. 6,852,409). The rejection is traversed.

As with Temperante et al., Goeman et al. described an article rendered hydrophilic by the conventional means of melt additives. Again with respect to Temperante et al., the Examiner ignores Applicant's limitation of "wherein said thermoplastic polymer layer is initially hydrophobic prior to surfactant migration", as the thermoplastic polymers of Goeman are rendered hydrophilic *prior* to extruding into films. The articles of Goeman et al. have a water contact angle of less than 90° specifically due to the inclusion of the melt additive.

Although the films of Goeman contain a fluorochemical additive, migration of the additive to an adjacent layer is not contemplated. At paragraph 19, the reference describes multilayer articles. In one embodiment, the multilayer article comprises a layer with the fluorochemical additive bonded to a layer not containing the additive. "In such a film, the side of the multilayer film with the fluorochemical hydrophilicity imparting compound will be readily coatable". Implying the other side, lacking the additive, is not coatable, and therefore no migration was observed. This is further supported by reference to Comparative Examples C-4 to C-6 in paragraphs 99 and 100, and in Table 3. In this construction, only the middle layer of a three layer construction contained the additive. The coatability was "bad", again suggesting no migration of the additive occurred from the middle layer to the outer layers.

The Examiner correctly notes the glaring deficiency of Goeman; that the reference is silent as to an adhesive layer comprising a nonionic fluorochemical surfactant, and attempts to correct the deficiency with reference to Bradley et al.

Bradley et al. teach a multilayer pressure-sensitive correction tape. To cure the deficiencies of Goeman et al, the Examiner refers to paragraph 47 which states the adhesive layer "may optionally contain tackifiers, wetting agents or dispersants". A suitable wetting agent is identified as a "nonionic fluoroaliphatic polymeric ester" from the assignee of this invention. Such a vague suggestion on the part of the reference does not put one in possession of Applicant's invention. There is no teaching or suggestion of any benefit other than improving the wetting of the adhesive. There is no teaching or suggestion that the reference "wetting agent" will migrate and render an adjacent thermoplastic polymer film hydrophilic.

There is further no motivation for providing the adhesive of Bradley et al. to the article of Goeman, and the polymers of Goeman are either inherently hydrophilic, or previously rendered so by a melt additive. Arguable, the reference teaches away from using the adhesive of Bradley, as the problem of imparting hydrophilicity is already addressed by Goeman et al.; using a fluorochemical melt additive.

Further, the polymers listed on paragraph 40 of Bradley et al. do not appear to be thermoplastic, as required by instant claim 1, although the reference does contemplate blend of these polymers with those listed in paragraph 42-43, some of which are thermoplastic. The Examiner is merely selecting one element of Bradley et al. and making an arbitrary combination with Goeman et al, without providing plausible motivation. The suggested motivation; "to properly wet the surface of the thermoplastic polymer film [of Goeman et al.] with the pressure sensitive adhesive [of Bradley et al.] ignore the fact that the two reference disclose different polymers used for different purposes, and without evidence that the wetting agents for the Bradley polymers would be appropriate for the thermoplastic polymers of Goeman et al.

The Examiner is using hindsight reconstruction, based on the instant teachings, which is not a valid basis for the rejection.

At page 8 of the Office Action the Examiner asserts 'that reliance on inherency is not improper even though restriction is based in Section 103 instead of 102.

Applicant's concur that inherency, in principle, is proper basis for a rejection under 35 USC § 103(a). Applicant's Agent, in the previous Response, noted that the Examiner was making a conclusory statement without supported reasoning, and appears to be arguing a rejection based on inherency. To the extent a rejection is based on inherency, it should be so stated, and the procedures of M.P.E.P. 2112 followed:

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a give set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

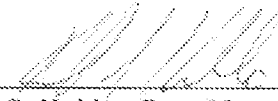
In the present and previous Office Actions, the rejection assumes that *any* surfactant added to *any* adhesive, in *any* amounts, will *inherently* migrate to an adjacent polymer layer, and *inherently* render it hydrophilic. The Office Actions provide no evidence, and therefore inherency cannot be relied upon as a basis for the rejections.

The rejection of claims 1, 13-17 and 30 under 35 USC § 103(a) as being unpatentable over U.S. 2002/0058744 (Goeman et al. = U.S. 6,476,114) in view of U.S. 2003/0152730 (Bradley et al. = U.S. 6,852,409) has been overcome and should be withdrawn.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested. Allowance of claims 1, 5-7, 11-20, 22-24, 29 and 30, as amended, at an early date is solicited.

Respectfully submitted,

Date January 15, 2007

By:   
Kent S. Kokko, Reg. No.: 33,931  
Telephone No.: 651-733-3597

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
Facsimile No.: 651-736-3833